

"Tepid and aromatic baths have been employed; those of vapour have, however, been considered as more efficacious. By Souville the infants were exposed to the action of the vapour by being placed upon an osier platform, and turning them constantly in every direction; a more ingenious apparatus, however, is employed at the Foundling Hospital: The infants there are placed to the number of six or twelve, upon a hammock, and this is inclosed in a kind of glass stove—here they are left for about twenty minutes. Under the influence of the bath the infants experience a sense of comfort, and on coming out of it apply themselves more readily to the breast. Valleix is fearful that the vapour bath, which can acquire a temperature of even 36 to 40 degrees (110° to 112° Fah.), may produce serious congestions. Its proper use requires, certainly, great care and no little practice.

"The state of plethora, the lividness of the surface, and the vascular injection detected after death have suggested the detraction of blood. Liberali and Palletta have had recourse to leeches to the legs or upon the thorax. The last-mentioned writer speaks of them as particularly efficacious; MM. Léger and Valleix have both seen good results from their use. M. Gintrac tested their effects in 1826 at the Foundling Hospital. The first patient upon whose epigastrium a single leech was applied lost a large amount of blood, and sank rapidly. In a second case, the utmost watchfulness was observed; at the end of two hours the bleeding having been arrested by the use of a crayon of nitrate of silver, the infant was well. The same result was often observed. The application of a single leech seemed to him always to be sufficient. It is in œdematous sclerema that this moderate loss of blood is beneficial, especially if indications are present of pulmonary or cephalic congestion. When there is pallor of the surface, with intense coldness and a very great hardness of the affected parts, in a word, when the indications of adipous or concrete sclerema are present, the application of even a single leech would be improper.

"In a similar case Andry and Auvity have had recourse to blisters to the thighs; it would be better, perhaps, to apply them to the chest.

"Fomentations with a decoction of cinchona have been employed, as, also, frictions with camphorated and aromatic liniments, etc., or inunction with the mercurial pommade. These topical applications are all inferior in efficacy to the kneading process of M. Legroux. Finally, the ipecacuanha has been used internally by Horn, a tonic potion by Chaussier. In the more grave cases, however, there is a difficulty in swallowing—while in the lighter cases the remedies indicated are useless. In both, milk will be found to do more good than either. For the new-born infant it is the best of tonics."

Among the acute eruptive diseases subsequently treated of by M. Gintrac, the most prominent are *erythema* and *urticaria*: then follows the consideration of the chronic cutaneous diseases, including those, also, of the hair, nails, etc. The latter department exhibits on the part of M. Gintrac the same patient industry in the collection and collation of facts, the same caution in the deductions he has drawn from them, and the same ability in the application of these for the elucidation of the character of the diseases treated of and their most successful management. In the author's account of the different chronic cutaneous affections there is much to interest, and we could very profitably indulge, could we afford the space, in many an extract. In conclusion, we would recommend the work before us as a most valuable addition to the library of every practising physician.

D. F. C.

ART. XXIII.—*Infant Feeding and its Influence on Life; or the Causes and Prevention of Infant Mortality.* By C. H. F. ROUTH, M. D., M. R. C. P. E., M. R. C. S., Physician to the Samaritan Free Hospital for Women and Children, etc. etc. 12mo. pp. 379. London, 1860.

THE proper feeding of infants is a subject which commends itself to the attention of all: the physician, the parent, and the philanthropist are all equally interested in its study. There are few things, however, in relation to which

there exist, in all directions, a greater amount of ignorance, and more mischievous prejudices. The mistakes daily committed in respect to it are productive of a large amount of suffering and mortality among our infant population. Even when errors in the feeding of infants do not act as a direct cause of disease they impair the nutrition of the child's system, reduce its vitality, and predispose it thus to the attack of maladies of the most serious character.

All perhaps are agreed that the only natural and appropriate aliment of the infant during the first eight, ten, or twelve months of its existence is the milk supplied it from the breast of its mother, or from that of a suitable nurse; and few will deny that it is a duty incumbent on every mother to suckle her babe. No one who has carefully examined the subject but will confess that by a neglect of this maternal office moral and physical evils are nearly always entailed upon the parent, and often irremediable injury upon her offspring. Still, there certainly do occur instances, more rarely perhaps than has been generally supposed, in which the infant cannot be nourished at the breast of either its mother or of a suitable nurse. Now, under these circumstances, the important question presents itself, what is to be done? where are we to find a proper substitute for the natural aliment?

The question is taken up and most fully and ably investigated by Dr. R., and under circumstances that would seem to be well adapted to insure a good degree of accuracy in the conclusions at which he arrives.

Dr. R. commences by showing, from authentic and varied statistics, the very high ratio of mortality which everywhere occurs among infants in foundling hospitals. He believes it to be an error, however, to refer this excessive mortality to the deprivation of breast-milk as its only or principal cause. In the several foundling hospitals no common law of mortality is to be observed, not even in the same institution during different years, to warrant the conclusion that in all of them there is one common morbid cause in operation—and that that cause is the absence of breast-milk in the dietary of the inmates. However injurious and destructive the latter may be, there are many other morbid causes also in co-operation. The several foundling institutions are placed in very dissimilar circumstances as to climate, location, cleanliness, and the number of their inmates. The quality of food supplied, and the principles upon which the children are fed, in these institutions, are so different, that absence of breast-milk could only account for a small share of the mortality. It is asserted and indeed proved that in Ireland, the mortality among orphans and foundlings in the hospitals is less than among the children of the general population out of doors.

From a large number of facts and statistics which have been collected and carefully collated by him, Dr. R. arrives at the following general conclusions:—

"1. That for the ages of one year and under five, the mortality, even under ordinary circumstances, is in towns nearly double what it is in the country; but this difference in the mortality according to residence is nearly seven times as great for foundlings; therefore, foundlings should never be maintained in towns.

"2. That in Ireland, while it is doubtless very high in the first month, for those under one year it is only 30 per cent. in towns, and 22 per cent. in the country; the worst mortality with foundlings being 50 per cent.

"3. That travelling in fair seasons is not dangerous to foundlings.

"4. That the mortality is greatest in spring, and least in autumn, with children in public institutions.

"5. That a chief cause in the mortality of foundlings is want of exercise, and the abuse of the recumbent position.

"6. That want of breast-milk will only account for a mortality of 3.4 per cent. additional.

"7. That a depraved hospital atmosphere and certain endemic contagious disorders are the chief causes of the mortality in foundling hospitals."

After adducing a series of very striking facts and statistics in illustration of the advantages of breast-milk for the food of the infant in insuring its life and proper and harmonious development, Dr. R. proceeds to examine the reasons that are urged why a mother should not suckle her child, and he shows very clearly as the result of such examination how very few are the valid causes

that should justify a parent in the abandonment of her maternal duties towards her infant.

The subject next discussed is the proper selection of a wet nurse when one is necessary. The importance of good moral character, general intelligence, and evenness of temper in the nurse every one will admit; but the physical qualifications the possession of which is essential to enable her to perform her duty towards the infant committed to her charge are not so well understood; they are thus enumerated by Dr. R. : 1. She should have good milk, the characteristics of which are given. 2. Her hereditary predisposition should be good; especially should she be free from any proclivity to tuberculosis, syphilis, or indeed any transmissible malady. 3. Her age should not exceed 30. 4. The period of her confinement should not have been many months before or after that of the child's mother. 5. She should not be of a melancholic temperament. 6. Her milk should not only be good in quality but also sufficient in quantity. 7. When, however, an infant cannot be suckled entirely by a wet nurse, artificial feeding may be assisted by its being occasionally put to the breast of a married woman who is at the time nursing her own infant.

The immediate morbid results of defective assimilation in infants consequent upon the use of improper aliment, in conjunction with the effects of bad air and want of cleanliness, are very accurately depicted by Dr. R. He divides the morbid condition or atrophy induced under such circumstances into three stages. During the first stage, there may be a semblance of health, the spirits of the child being but little affected. More commonly, however, it is at times, and apparently without cause, unusually peevish and irritable. Its flesh becomes flabby and the skin loses the silky texture so common in healthy children during the first months of existence. The infant will frequently throw up its food having an intensely acid smell. Its appetite is impaired and its sleep is disturbed. The bowels may be constipated; the stools, when obtained, being clay-like with white lumps in them. All these symptoms are increased in intensity during the second stage. There is now more decided irritation of the intestinal canal; frequent vomiting and diarrhoea may be present, the stools being very green and offensive, and so acid as often to excoriate the fundament and surrounding parts. The emaciation is more rapid, the eye assumes a peculiarly bright expression, and the child has an aged look. Sometimes there is no diarrhoea; the stools, however, when they occur being replete with undigested matters. Emaciation is always present. A further development of the symptoms enumerated constitutes the third stage. The child's appetite becomes voracious, nothing seems to satisfy it. Aphthae appear in the mouth and gradually extend down the alimentary canal. There is often an unmanageable diarrhoea: thirty to forty motions a day, of little else than undigested food, are not uncommon. The emaciation becomes frightful: in the course of a few hours the infant acquires the look of a wrinkled old man. There is an unnatural brightness of the eyes, which seem to project beyond their sockets. The voracity continues to the end. It is sleepless, constantly whining or crying. Emaciation constantly goes on until the child dies in the last stage of inanition.

Dr. R. believes that the aphthous form of the disease, especially when a number of children are congregated together in small and unventilated apartments, is apt to assume a contagious character and become exceedingly malignant. The disease being communicated by the use of the same towel, spoon, or artificial nipple. The aphthae in these cases are not confined to the mouth and alimentary canal, but occur occasionally upon the conjunctiva, upon the vulva in girls, etc.

When diarrhoea is absent the disease may extend over a period of several weeks. It is singular how the little shrivelled, old-looking child will be seen to smile at one, particularly after a meal; a temporary sunbeam appearing as it were in the midst of the general wreck. In these protracted cases no quantity or kind of food, no form of medicine will do any good, however assiduous and varied are the trials made.

Sometimes after running into the second stage, or it may be even in the first, the disease does not follow out the course described—primary assimilation is defective only, not entirely arrested. Tuberculosis then makes its appearance,

generally as *tabes mesenterica*, more rarely as *phthisis*. By far the most common of the maladies developed, however, is *anæmia* with more or less of *rachitism*.

The post-mortem appearances are, extreme emaciation, little fat remaining; very scanty cellular tissue; great wasting of the muscles throughout. In cases attended with diarrhœa, the entire alimentary canal is lined with red patches and aphthæ, varying in size from that of a pin's head to that of a bean. Peyer's glands are much reddened and swollen. In some cases no aphthæ are present, but the mucous membrane from below the biliary ducts is much reddened, with a bloody intensely acid mucous exudation upon its surface. When there has been no diarrhœa the alimentary mucous membrane is pale, but Peyer's glands are much swollen, projecting from the mucous membrane in round patches, some three or four lines broad by ten or twelve long, apparently filled with exudation, and precisely similar to their condition as observed in cases of Asiatic cholera.

The proximate as well as the remote causes of defective assimilation in the infant being most intimately associated with bad or defective alimentation during the first stage of existence, Dr. R. proceeds to discuss the correct principles of feeding during infancy, laying down at the very outset the two following positions in respect to the management of infants, as essential to their preservation: 1st. That the infant, especially during the early periods of its existence, should be kept warm, artificially or naturally, during the time it is being fed; 2d. That a child should be made to take at such periods the semi-erect position, which is the natural one.

Dr. R. maintains, and we think very properly, that animal food is indispensable during infancy. Food to be capable of supporting life must contain three substances in due proportion: 1. Plastic or nitrogenous matter to nourish the fleshy parts of the body—fibrin, albumen, or casein; 2. Calorifiant or combustible matter, *i. e.* hydrocarbons, to supply the respiratory process, to keep up animal heat, and to provide fat for the body—fats and oils, sugar and starch; 3. Mineral matters, or salts, to supply the bones, and hold in chemical union, combination, and action, the solids and liquids of the body—lime, potash, soda, magnesia, in union with phosphoric, sulphuric, hydrochloric acids and many others. Milk contains all these elements: Casein, the plastic ingredient; fat and sugar, two combustible substances, and the several needed mineral matters. Hence milk if given in sufficient quantity will support life for any length of time. The proportions in which these three elements of food are contained in other aliments vary; it should be, at least, 10 of plastic to 30 or 40 combustible, while the mineral should vary from 1.5 to 6 or 7 per cent.

Dr. R. points to the fact that the best and most simple substitute for human milk is, clearly, milk from some other animal, especially when this can be taken by the infant by suction direct from the nipple of the animal. The milk of the ass, goat, and cow, are the substitutes usually resorted to. The milk of the ass contains more water than that of the human female; only about half as much butter and casein, but nearly twice as much sugar and salts. Goat's milk approaches nearer in composition to woman's milk. The quantity of the milk varies somewhat in the different breeds of goats, and, also, according to the nature of the food the animal is fed on, and the care bestowed upon its keeping. Cow's milk has less water than women's milk, a larger amount of solid matters; more casein, more butter, and more salts, but less sugar. Like that of the goat its qualities, also, are modified by the breed, the food, and the care taken of the animal; usually also by the season of the year. It is probable that the milk of either the goat or cow, when either animal is healthy, and properly fed and cared for, will furnish an aliment well suited for children who are necessarily deprived of the mother's breast or that of a good nurse. Dr. R. believes that the milk obtained from cows fed upon beet-root, with a very small dilution of water, might be brought so closely to resemble human milk as in all respects to perform the same services.

The efforts to rear infants upon the milk of animals will often fail, however well to all appearance conducted. The use of such milk often gives rise to the generation of a large amount of acid, and not unfrequently to a wasting diar-

rhœa. When this is the case, it is said that a mixture of one pint of cream to three of water will often prove very beneficial. Cream contains very nearly the same ingredients as milk, except that the casein is diminished, and the fatty matters considerably increased. In this manner, Dr. R. remarks, the absence of sugar is compensated for by the excess of fatty matters, and the mixture becomes sufficiently rich, both as a nutritive and calorifiant aliment. The addition of water diminishes the density, and renders the cream more digestible. The tendency to acid may be removed, the solubility of the casein and the emulsion of the fatty matters insured, and both rendered more assimilable by the addition of half an ounce of lime-water to every half pint of the mixture.

Desiccated milks have not been used to a sufficient extent to enable us to judge positively of their fitness as an aliment during early infancy. Eggs approach very nearly to milk in their composition, and may be resorted to with propriety as an article of food for infants. The white, however, should be given as nearly as possible raw, or only heated to 130° F. Beyond this temperature it coagulates, and is then much more difficult of digestion. If the egg be put in boiling water for two minutes only, it will have merely a thin layer of albumen coagulated on its surface, and at the same time be warmed sufficiently throughout. Cow's milk contains 5.5 of casein per cent., the white of eggs as much as 11.1, the yolk 1.5, together 12.6. Eggs, therefore, should be diluted; and, with a little sugar of milk added, would form a very fair substitute for milk. Beef-teas, in whatever way prepared, are rather doubtful forms of aliment in the case of infants, while jellies are unassimilable: they only overload the blood with nitrogenous products, and thus impair its purity and its adaptedness to build up properly the several tissues.

It has been found that raw meat very finely shred, or scraped into a pulp will often be eagerly taken and always perfectly well digested by young children. Its use, however, is not recommended as an ordinary article of food, but only in cases of long standing diarrhœa. In many of these cases, apparently, it has been to it alone that the preservation of the life of the patient was attributable. Dr. R. considers it to be, probably, one of our most important remedial means in the treatment of defective assimilation. There is a danger attendant upon the use of raw beef as an article of diet unless there is a certainty it is in all respects perfectly healthy, and that is the generation by it in the human body of certain parasites, among which may be enumerated *tape-worm*, the *cysticercus*, and *trichina spiralis*.

In the infant as well as in the adult, variety is essential to the maintenance of health. There has long existed a prejudice, both in and out of the profession, in favour of vegetable food, particularly farinaceous, during the earlier periods of existence. The views upon which this prejudice is based are altogether erroneous. Vegetable food is neither easily digested, nor in the proper sense of the term, nutritious. To some extent the erroneous views in reference to this subject have been corrected by recent more accurate observations. According to Dr. R., the earliest period at which vegetable food can be borne is about the eighth month. "The teeth which appear," he remarks, "are not of value because they are then capable of mastication, but simply as evidence that changes have occurred in the organs of digestion, which have progressed *pari passu*, and that the salivary and pancreatic glands of the membranous stomach are in full development, and capable of digesting vegetable aliment. Then, and only then, therefore, as a rule, may vegetable food be given, and consequently weaning may be tried, if necessary." But even then only the most easily digestible vegetable substances should be allowed at first; and it is best to continue, also, in a great measure, the animal milks in combination.

In proceeding to consider the treatment of defective assimilation, Dr. R. refers again to the facts which prove the superiority of the mother's milk, or that of a proper nurse, for the nourishment of the infant, and its influence in the preservation of the health of the latter, even when its use is combined with injudicious hand-feeding, showing the importance, therefore, of securing, by every effective means, the natural aliment to the infant for as long a period as possible. Even in cases in which it is not secreted in sufficient quantity to furnish the entire nourishment of the infant, the mother should not be permitted to desist

entirely from suckling; the deficiency of the nourishment supplied by her being made up in the mean time by artificial food of a suitable quality, while everything is done with the view to increase the flow of milk from the maternal breast.

The subject of defective lactation and its treatment is discussed by Dr. R. under three heads: 1st. When the defect arises from a state of hyperæmia from over-feeding, etc.; 2d. When it is attended with a weakened, or anæmic state of the body; 3. When it results from torpor of the breast. The first variety is the least common and by far the most easily got rid of. The third is the most frequent; it is usually met with in middle-aged females, or those who have married at a late period in life, or who are somewhat masculine in form and character; it may result also from paralysis, mental emotions generally, disease of the female organs, with or without atrophy of the mamma, excessive obesity, impure air, and the neglect of regular lactation. In the first variety the remedies are a gentle purgative, a more simple, less exciting diet, the entire disuse of all fermented or distilled liquors; at the same time, care being taken that a due amount of nutritious matter be taken in order to prevent a complete suspension of the secretion of milk. The second variety calls for a nutritious diet, light stimulants and tonics; gentle daily exercise and a pure, free air. In many of the cases belonging to the third variety the deficient action of the mammary glands cannot be restored, in others, however, the supply of milk may be augmented by artificial suction or drawing of the breasts; by electricity; by a proper diet and regimen, certain local applications and perhaps galactagogues internally. Among the various articles included under this head Dr. R. distinguishes especially decoction of the leaves and stalks of the castor-oil plant, an infusion of fennel-seeds, etc. etc.

The remainder of the treatise is devoted to a consideration of the nature and treatment of the atrophy of infants resulting from errors in diet and regimen. According to Dr. R., it is the power of *primary* assimilation, or digestion in the alimentary tract only which is lost, while *secondary* assimilation, or the absorption and appropriation of assimilable matters, if such be present, may still be effected. It is, therefore, manifest that ordinary dieting will never suffice to restore the child. Starchy matters, which are so generally prescribed, should not be given. In the morbid condition under consideration these substances cannot undergo in the stomach the normal changes necessary to their proper assimilation. How far the same is true in respect to sugar must be determined by future inquiry. Glucose is probably occasionally digested in these cases. The albuminous matters, particularly the casein and oily substances that are taken, do not seem to be digested any better than starchy matters. Milk passes off by the bowels in many instances only curdled, but otherwise unchanged. This is a state of things peculiar to the disease under consideration; it is not met with in other analogous atrophies in infants, to the same extent at least. Even the attempt to feed the patients on breast-milk has failed: they seem neither able nor willing to take it.

It will be impossible for us to follow Dr. R. in the details of the treatment laid down by him for the form of atrophy in question. His suggestions in relation to the use of artificial gastric juice to aid the stomach in the solution and assimilation of albuminous substances, and of artificial pancreatic juice, or of the phosphate of soda to assist in the digestion of fatty matters, and perhaps of sugars also, are deserving of a careful examination. The emulsion of fats may be effected also, he remarks, by giving to the patient only the fatty acids of which they are composed, and which are readily absorbed into the system. The good effects of cod-liver oil are probably in some measure due to its excess of fatty acid. The same is true of butter. Many children, it is well known, grow fat upon bread and butter. They appear, indeed, to thrive on it when all other means fail.

To correct acidity of the alimentary canal Dr. R. recommends lime-water, and to counteract the flatulence and colicky pains, some light carminative, or, in severe cases, wine whey made by adding to two parts of boiling milk one of good sherry or port wine.

The best article of diet in these cases is the milk of the human female, or when

this cannot be furnished at all, or only to an insufficient extent, that of the ass, goat, mare or cow. When the infant is to be fed on cow's milk, we should always endeavour to obtain it from an animal at grass. It should be given to the child diluted with water, one or two pints to one of the milk, according to the age of the child; diminishing of course the extent of dilution as the child becomes older. If two parts of water be used for dilution, sugar should also be added in the proportion of one to two drachms to every pint. To each pint of the diluted milk, from one to one and a half ounces of lime-water should be added to neutralize the amount of acidity present. Which amount may be generally determined either by testing the milk with litmus paper, or more accurately perhaps, by the symptoms observed in the child—frequent hiccough, and apparent griping especially after feeding, as evinced by an occasional cry, and sometimes the drawing up of the legs, followed generally by a loose greenish stool. Vomiting is usually present, the ejected matters having an intensely acid smell. These premonitory symptoms, if neglected, will be succeeded by confirmed diarrhoea. In these cases lime-water in excess is indicated. All admixtures of vegetable matters are improper excepting as correctives of bad milk.

Dr. R. gives proper directions for estimating and correcting inferior kinds of milk by arrow-root and cream. Occasionally, where diarrhoea is very obstinate, rice-water he directs to be substituted for ordinary water as a diluting medium.

Now and then, he remarks, not only is diarrhoea present, and intense debility, but also great irritability of stomach. No kind of food is retained, not even wine whey; even those substances, perhaps, which have hitherto agreed best with the child can no longer be borne. The best aliment in these cases, according to Dr. R., is *raw meat*. It often settles the stomach and alimentary canal when all else is rejected by vomiting. Dr. R., after some years of experience, has come to regard it as one of the best and surest remedies we possess in such cases.

We will now give, very nearly in his own words, the remarks of Dr. R. on the medicinal treatment of defective assimilation.

In the milder cases all that is required is a proper attention to diet and regimen. The occasional use of carminatives, with half a teaspoonful of castor oil when needed, and small doses of alkalies, will often remove the irritability of the alimentary canal. Cod-liver oil is usually beneficial; it may be given after meals, in teaspoonful doses, with the addition, if there is much acidity, of one, two, or more drops, according to the age of the patient, of liquor potassæ. In some cases, where there is indigestion, the oil may, with great advantage, be combined with from a half to one teaspoonful of the *essence of rennet*. In more severe cases, and if diarrhoea be present, Dr. R. pronounces the *nitrate of silver*, in doses of one-sixteenth to one-eighth of a grain, to be, without doubt, the best remedy; sometimes the *sulphate of copper* in similar doses proves effective. He places little confidence in catechu, logwood, chalk mixture, or opium. Anodynes he considers to be sometimes useful. Thus, when a child cannot rest or sleep, they are imperatively called for. The nervous child is over-excited—it needs to be calmed: two to five drops of tincture of henbane, in a teaspoonful of dill water, at night, will suffice. Often, after a week or ten days, the child will be found to rest without its further use. Opium is more certain, but it is, at the same time, a much more dangerous remedy in the case of infants. Dr. R. has seen two children killed by it; in one of the cases a single drop of laudanum constituted the fatal dose. He thinks, however, that when given in quarter-drop doses gradually increased and carefully watched, these unfortunate results from the use of laudanum will seldom occur.

Defective assimilation is sometimes attended with feverish excitement; which usually comes on at night, and is no doubt due in great measure to the gastric irritation. In such cases, we are assured, that external inunctions of oily or lardaceous substances prove most effective remedies. The rationale of the curative operation of these substances is not yet satisfactorily explained, but of the fact, according to Dr. R., there can be no doubt. Thus, if the child be completely rubbed over with a mixture of suet and sweet oil, of such a consistency as will allow it to remain on the surface, in about three hours' time, or

even before, the skin will be found to have cooled and become soft; the anorexia to have disappeared, while often a quiet comfortable sleep will soon follow. The next morning the child should be washed in a warm bath. Two or three applications of the inunction, it is said, will generally effect a cure of the feverish excitement, and the irritation of the alimentary canal is usually at the same time greatly benefited. Dr. Simpson, of Edinburgh, has shown the good results derived from external inunction of cod-liver oil when the remedy could not be taken internally. When, in cases of defective assimilation, in connection with the emaciation, there are attacks of hectic fever, frictions of the surface with cod-liver oil will often remove both symptoms, and greatly improve the general health of the patient. *Milk baths* in cases attended with dyspepsia and great emaciation have been found most effective remedies. Dr. R. presumes that in these cases, absorption of the fatty and nutritive matters takes place through the skin. Nutritive injections are sometimes beneficial where food cannot be taken into or retained upon the stomach. Life has been prolonged by them until the irritation of the stomach has subsided, and aliments could be again taken in the ordinary way. Even cod-liver oil may be absorbed if given in an injection.

In respect to the treatment of the aphthæ by which defective assimilation is so often accompanied, Dr. R. remarks, that "the *mild form* will generally yield to borax and honey, weak solutions of alum, and the other remedies employed ordinarily in thrush. The other variety, the *malignant or contagious*, is a much more serious affection; it more closely resembles *diphtheria*, and requires an analogous treatment. Generally wine whey, or wine, should be given freely. As local applications, the only remedies which in my hands have cured have been, first, a weak solution of nitrate of silver, applied by means of a sponge all over the affected parts, twice or three times a day; secondly, the tincture of sesquichloride of iron, in strength varying from one part of the tincture in from seven parts to an equal quantity of water. In cases where the throat or nasal mucous membranes are covered with these aphthæ, I have used a fine syringe, and injected sparingly, either down the throat or up the nasal cavity, the weaker solution. * * * Such local and general treatment, however, must not supersede the hygienic. Pure air, isolation, the free use of disinfectants, and scrupulous cleanliness, are also needed; in fact, every measure is to be taken which will in any way prevent the development of that infantile hospital atmosphere which is always observed wheresoever many children are congregated together, and which proves invariably deadly in its effects."

We recommend an attentive perusal of the treatise of Dr. Routh by every physician. It is certainly replete with instructive facts and practical deductions regarding the proper feeding of infants—the morbid conditions resulting in them from improper and deficient nutriment, and the means best adapted for their correction. We know of no treatise in which these subjects—which are of the deepest interest to every medical practitioner—are treated in a more able and philosophical manner;—no one, indeed, which throws so great an amount of light upon every question connected with the proper dietary of the early periods of existence. Our analysis of it has been necessarily confined to a bare outline; it but imperfectly indicates the exceeding riches of the volume and the sound practical sense by which it is characterized throughout. D. F. C.

ART. XXIV.—*On the Signs and Diseases of Pregnancy.* By THOMAS HAWKES TANNER, M. D., F. L. S., Member of the Royal College of Physicians, etc. etc. 12mo. pp. 504. London, 1860.

In this volume Dr. Tanner has presented a very fair exposition of the actual condition of our knowledge in regard to the subjects indicated on its title-page. Whether such a work was called for in order to supply a want in medical literature, or whether all it teaches was as fully and satisfactorily taught in the nume-